

# 2023 TRANSPORTATION MASTER PLAN AMENDMENT

## TRUCK ROUTE MAP

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## OVERVIEW

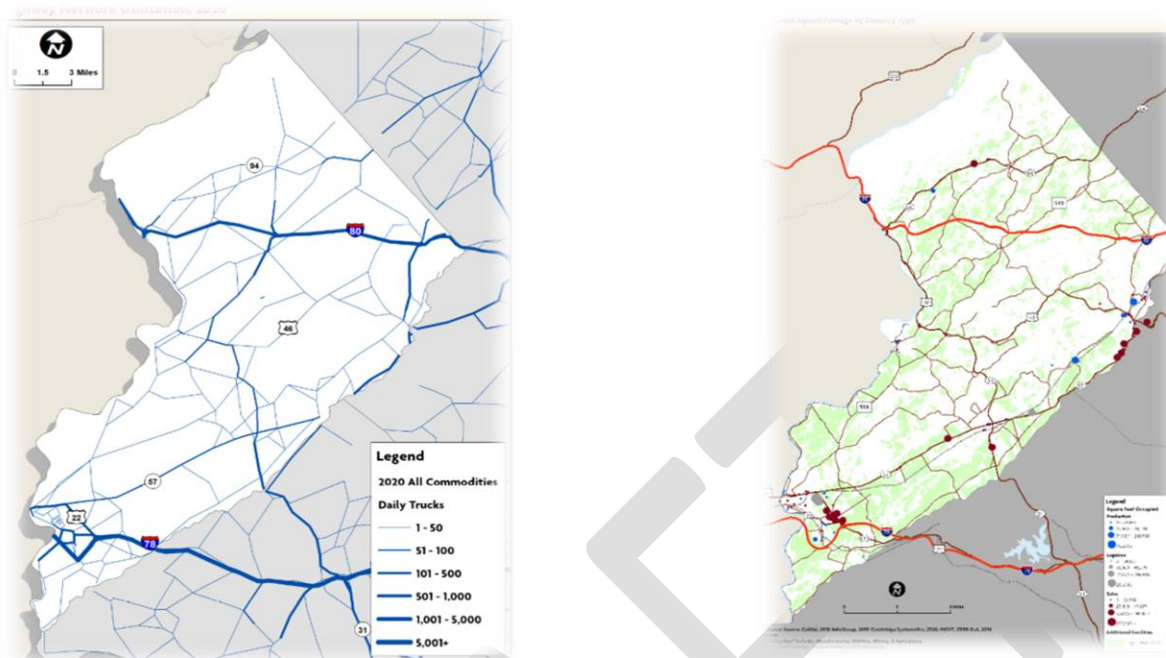
This Transportation Master Plan amendment has been developed to address truck traffic issues by identifying and implementing a truck route map that will be part of a larger truck routing strategy. This map is the first step and has identified suitable routes for heavy vehicles. Next steps may include developing signage and communication strategies to direct truck traffic to these routes, and potentially implementing physical improvements or restrictions or regulations to discourage trucks from using inappropriate roads. Effective truck routing can help to reduce congestion, improve safety, and protect the integrity of local roads and infrastructure.

Warren County has been experiencing unprecedented warehouse development over the past three years which has in turn created significant increases in the amount of freight traffic on already underdeveloped and aging two-lane roadway infrastructure. The State, the NJTPA, and the New Jersey Highlands Council have all since reacted to the complications created by the explosion of this type of development especially for rural areas like Warren County, by developing warehouse planning guidance, and grant programs designed to mitigate the negative traffic impacts associated with these developments. Warren County was ahead of the State and the region in this effort and conducted a Light Industrial Study in 2020 near the onset of this explosion in development nearly four years ago. The Light Industrial Study identified 15 areas zoned industrial and evaluated what the traffic impacts may be if they were developed to their potential under a set of limiting criteria and assumptions. Municipalities were alerted to the results that since the County is primarily served by rural, two lane, aging and underdeveloped roadway system, the system would not be able to handle the increase in truck traffic without significant improvements that would take years to develop, likely resulting in tax increases. With few exceptions, master plans and zoning were not changed and now the county is seeing many of those 15 areas and others under development pressure for warehouse development. To mitigate the flow of truck traffic, a plan needs to be prepared to guide existing and future truck traffic onto the roadways most suited for heavy truck traffic. Since this study, according to the National Highway Traffic Safety Administration there has been an increase in the number of truck accidents in the county, number of fatal accidents attributed to the increases in freight traffic in the county, and a significant increase in volume of truck traffic in the County especially along Route 519. It is evident that the roadway infrastructure cannot support further increases in truck traffic and have already created an increasingly tenuous situation.

*Image 1: County Route 623*

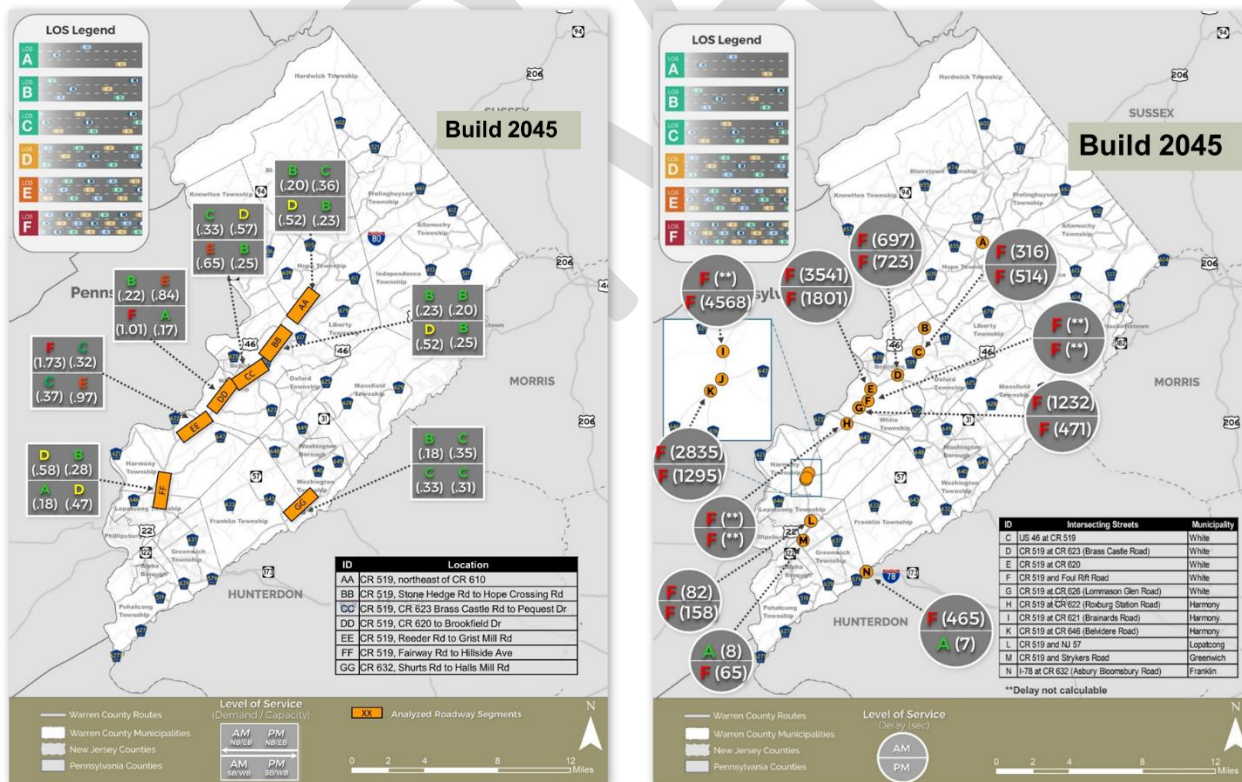


Figure 1: Daily Truck Trips and Business Square footage Maps from 2020 NJTPA Freight Profile



PLANNING INITIATIVES AND BACKGROUND

Figure 2: 2020 Light Industrial LOS Buildout





The County is building off of the 2021 Transportation Master and working towards developing options towards addressing truck and freight movement in the County. In addition to the Light Industrial Study in 2020, the county conducted a County 519 traffic projection study with analysis of Level of Service failures in 2022, a cash analyses with the most recent data from 2021, Roadway Safety Audit for a segment of County Route 519 in 2022, and passed a resolution requesting the NJDOT to impose a large truck and 102 inch wide truck restriction on the County’s 500 series roadways in early 2023 included in Appendix B of this amendment. Additionally, the NJTPA has put together a Freight Profile for the County in 2020, and the New Jersey Office of Planning Advocacy developed Warehouse Siting Guidance document which the County is working towards implementing some of the strategies outlined in that document.

As part of this comprehensive approach, the County is opting to move forward and adopt a Truck Route Map and an Amendment to the Transportation Master Plan that will be utilized as part of site plan and subdivision review for truck generating land uses proposed to be developed that will impact county roadway infrastructure and enforced through the development review process. One way will be to execute developers agreements where the owners/ users of the constructed facilities would be required to follow the Routing on this map. The routes were established with the intent of guiding truck traffic in the most expeditious and safe fashion to the state and interstate highways.

Figure 3: 2022 NJTPA Industrial Market Overview



This amendment perpetuates the following Bolded and Italicized Goals of the Transportation Master Plan:

- 1. Provide transportation infrastructure that is consistent with Warren County's rural character**
- 2. Focus growth and infrastructure in existing centers**
3. Minimize and mitigate environmental and stormwater impacts of transportation infrastructure



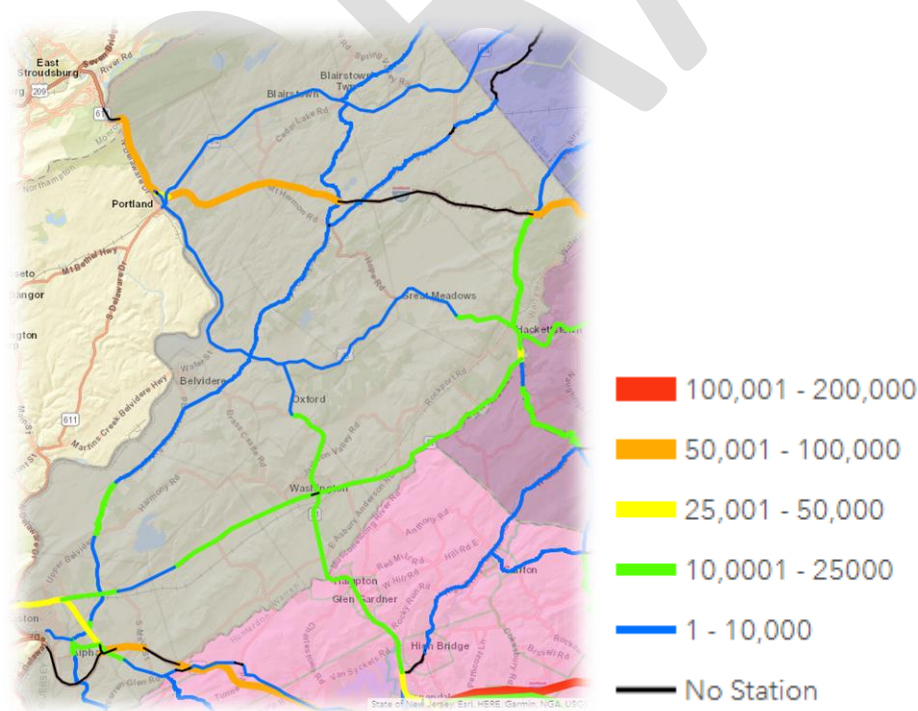
- 4. Maintain and improve the existing transportation system**
5. Provide multimodal transportation choices that improve safety, mobility, and equity
6. Improve the resiliency of Warren County's transportation infrastructure
7. Improve access to education and employment opportunities
- 8. Promote cooperation and participation to advance mutual interests**
- 9. Encourage state enabling legislation to provide municipalities and counties more authority over the impacts of traffic on their roadways from new development**
- 10. Monitor and incorporate technological trends and innovations in transportation projects and strategies**

The 2020 Light Industrial Study and 2021 Transportation Master Plan both discussed the use of Transportation Demand Management (TDM) Strategies as well as specific infrastructure improvements. This Amendment is working towards an interim solution but aligns with the mitigation TDM.

- **Transportation Demand Management**
  - Use Freight Rail
  - Stagger Work Shifts
  - Promote Non-Peak Trips
  - Encourage Development Adjacent to Major Highways
  - Fund Infrastructure Improvements with Developer Contributions
  - Create County Freight Advisory Group
  - Encourage Facility Operators to Use Specific Routes
  - Employ Alternative Transportation Modes (Transit, Shuttles, Bicycles, etc.)

## ONGOING TRENDS AND ISSUES

Figure 2: New Jersey Annual Average Daily Traffic 2022 GIS





From a Land Use Standpoint there are over 5,000 vacant acres of industrial zoned land that could be developed with warehouse/industrial development. The County currently has 2.5 million square feet of warehousing with over 5 million sq. ft. of warehousing in various levels of approval at the local, county and state level. As such it is expected that The County will continue to see increases in truck traffic over the next 5 to 10 years as these developments are constructed until the existing zoning is built out or the market shifts to some other land use type as the focus.

For this amendment we built on the data developed in the 2020 Light Industrial Study which highlighted 15 specific sites totaling 4,000 acres or so and developed a build out model that resulted in the potential for 45 million sq. ft. of gross floor area warehousing that could be developed. For this amendment we conducted an analysis of the total acres of industrial zoned land county wide and subtracted the approved and developed properties to ascertain the remaining acreage of Industrial zoned properties left. The analysis in this Amendment included all industrial zoned properties including Redevelopment Areas that permit industrial development. GIS was utilized to clip the existing developed portions of these properties which resulted in an approximate total of 8,250 acres of remaining industrial zoned land. While for the purposes of this proposed Truck Routing Map adoption we did not conduct a detailed build-out analysis like the one prepared in the 2020 Light Industrial Study we expect that since the 4,000 acres included in the study would at build out produce up to 45 million square feet that the remain 4,200 acres could produce 40-50 million sq. ft. of additional gross floor area of warehousing. A conservative estimate is that 80 million square feet of additional warehousing could be built throughout the county. Figure 4 below shows the approximate acreage of undeveloped industrial zoned properties for each municipality with industrial zoned property.



Figure 6: 2020 Light Industrial Study Sites Analyzed

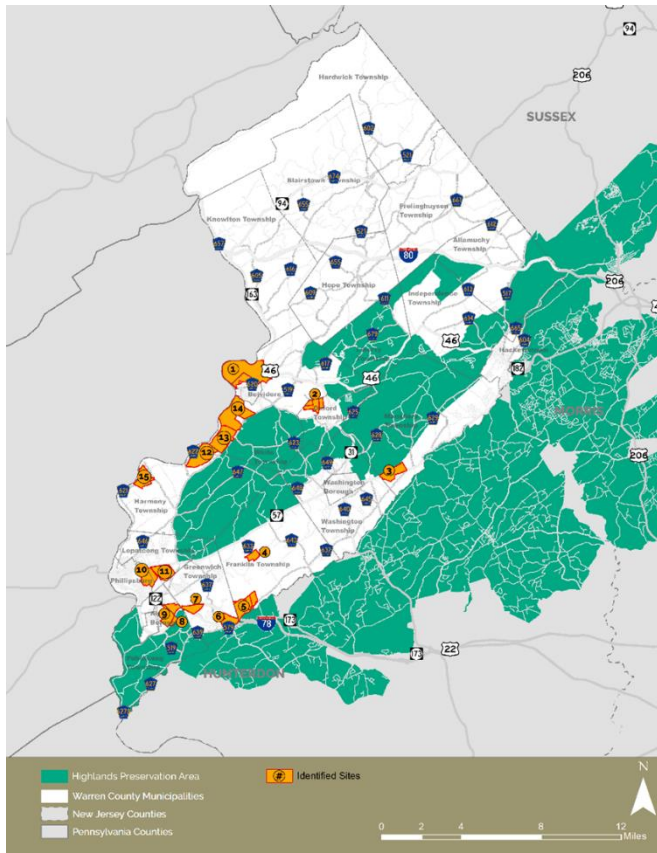


Figure 7: Undeveloped Industrial Zoned Land

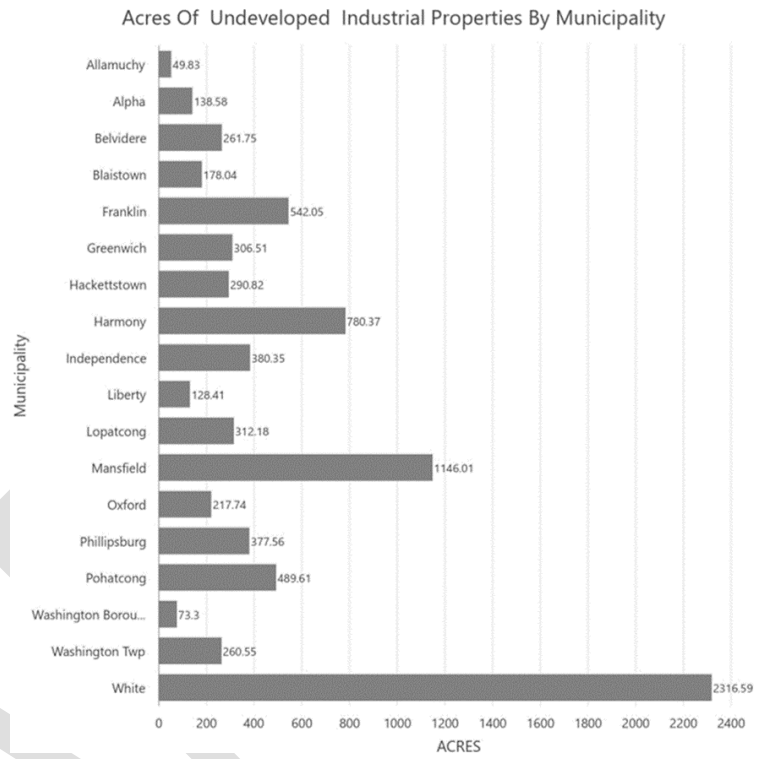


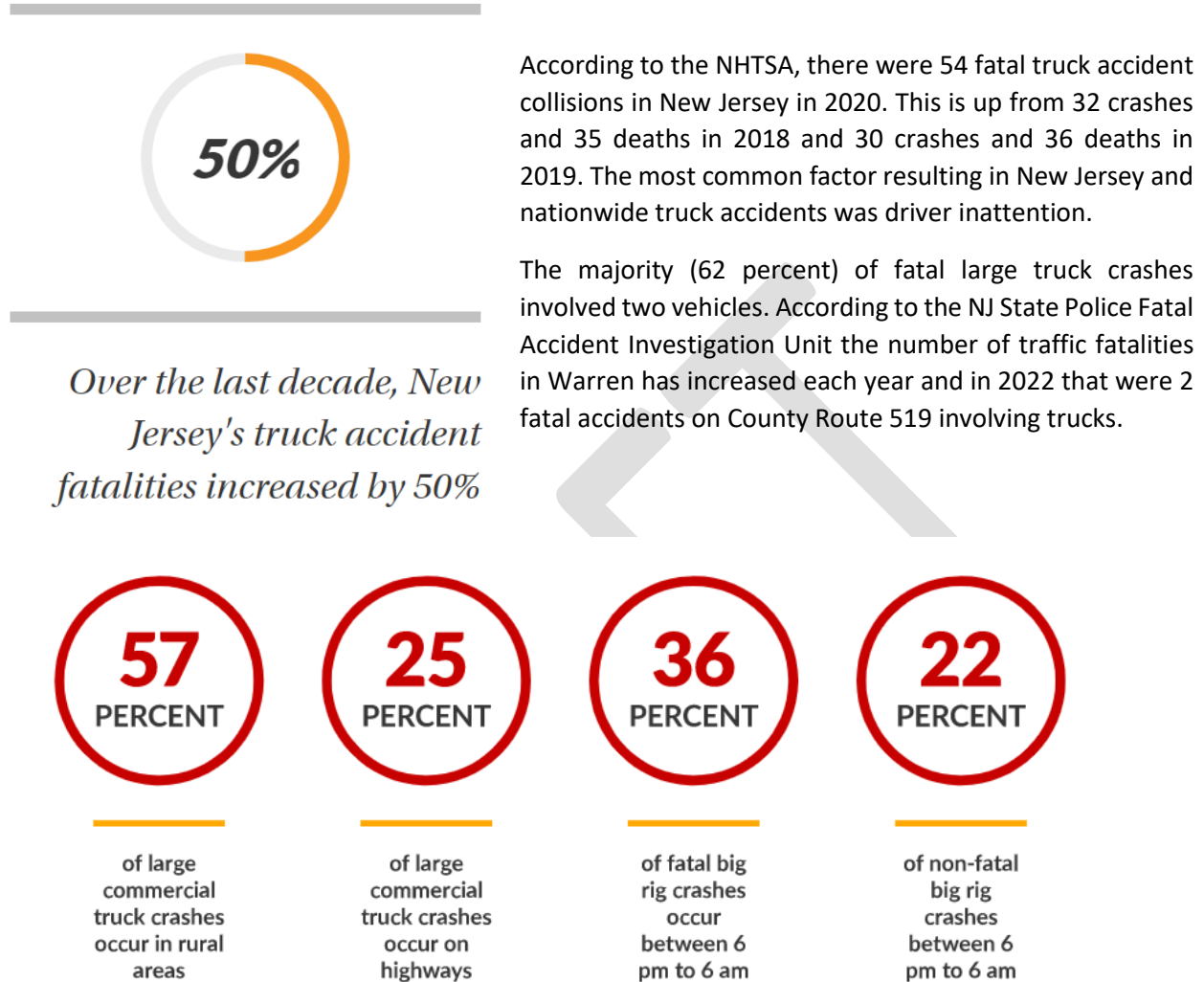
Figure 8: Industrial Zoned Sites in Warren County







Figure 9: NHTSA Data NJ

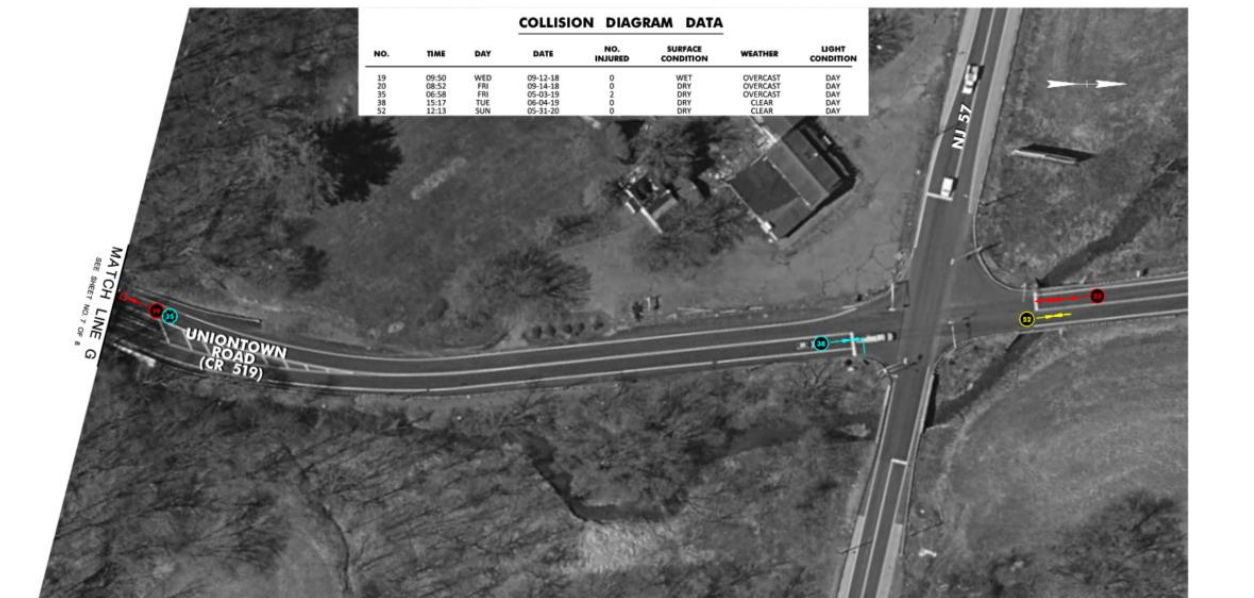


According to the 2021 Crash Data included in the 2021 Transportation Master Plan which was developed utilizing the NJDOT's Safety Voyager Data through 2015 hotspots include major intersections along County Route 519, 517, and 521. All have the potential to see additional truck traffic based on the location of the existing developed Industrial zoned properties. For the purposes of this amendment a hot spot crash analysis was completed based on the County Derived Crash Reports from 2015 through 2022 to serve as an update to the analysis performed in 2021. The county utilized an optimized hotspot analysis using the Getis-Ord Gi\* statistic. The hotspots correspond to those identified in the 2021 map in the Transportation Master plan. The 2022 Roadway Safety Audit completed by GPI under contract with the NJTPA/NJDOT for County Route 519 between US 22 and State Highway 57 many of the potentially developable industrial lands would result in increasing traffic through these intersections. The crash summary maps 2018-2020 are shown below;



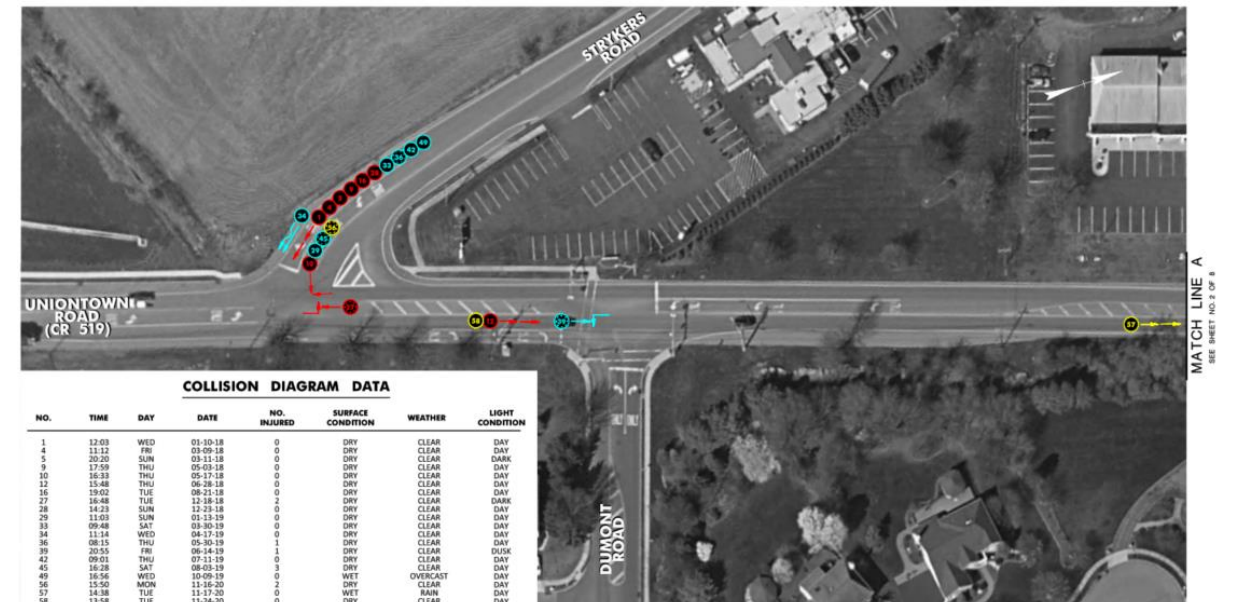
Draft 2023 Transportation Master Plan Amendment- Truck Route Map

Figure 10: 519 Roadway Safety Audit Collision Diagrams



**LEGEND**

<b>NUMBER OF CRASHES WITH</b> PROPERTY DAMAGE ONLY: 4 INJURIES: 1 FATALITIES*: 0 TOTAL NO. OF CRASHES: 5	<b>SYMBOLS</b> MOVING VEHICLE BACKING VEHICLE NON-INVOLVED VEHICLE PEDESTRIAN BICYCLIST PROPERTY DAMAGE ONLY CRASH INJURY IN CRASH FATAL CRASH FIRED OBJECT NON-FIRED OBJECT ANIMAL POT-HOLE	<b>TYPES OF CRASHES</b> REAR END HEAD ON SIDE SWIPE OUT OF CONTROL OVERTURNED ENDOACHMENT LEFT TURN RIGHT ANGLE STRUCK PARKED VEHICLE	<b>COLORS</b> 2018 CRASHES 2019 CRASHES 2020 CRASHES	NEW JERSEY DEPARTMENT OF TRANSPORTATION UNIONTOWN ROAD (CR 519) FROM STRYKERS ROAD TO MEMORIAL PARKWAY GREENWICH TOWNSHIP, WARREN COUNTY 2018 - 2020 COLLISION DIAGRAMS <b>GPI</b> Engineering Design Planning Construction Management NOT TO SCALE
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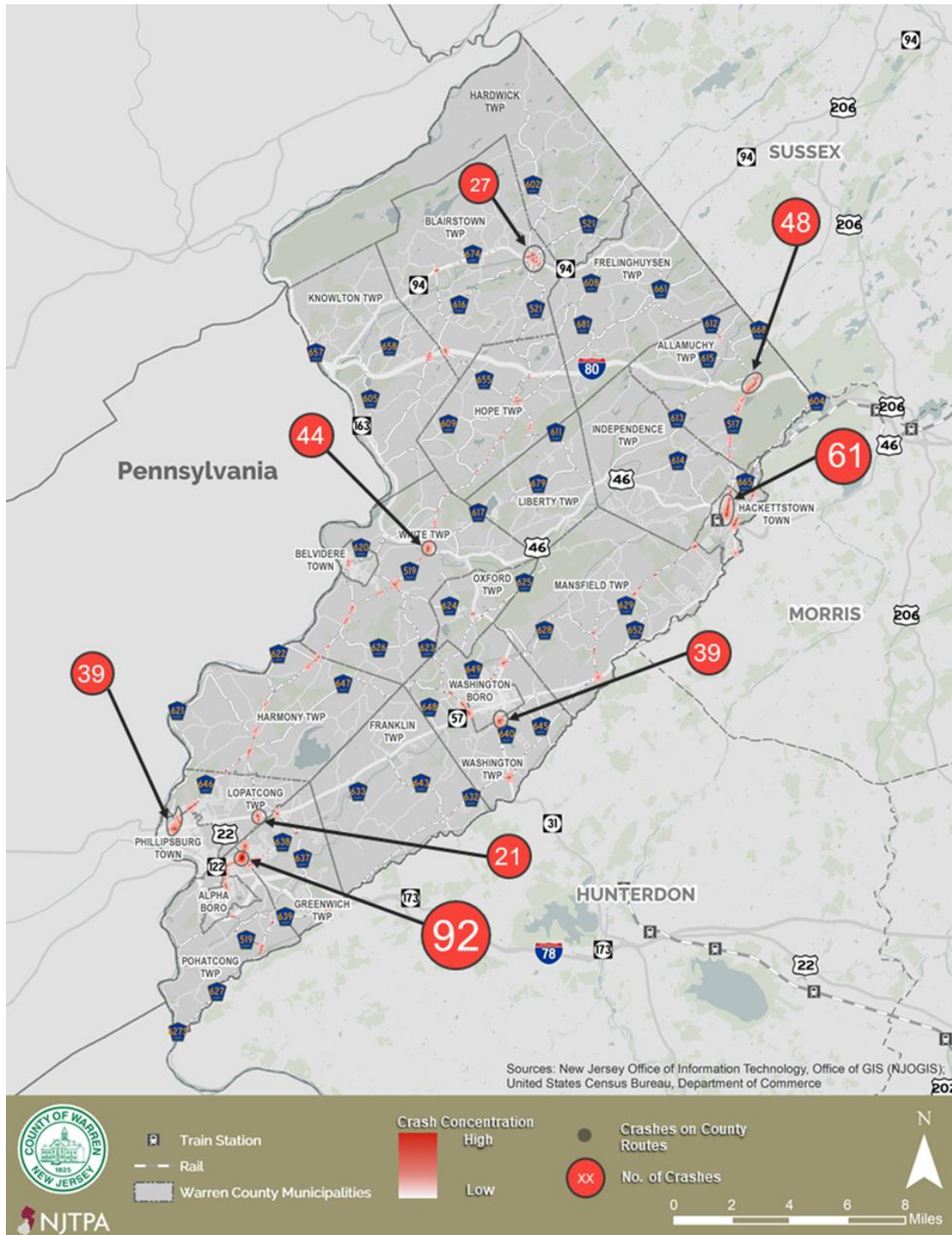


**LEGEND**

<b>NUMBER OF CRASHES WITH</b> PROPERTY DAMAGE ONLY: 15 INJURIES: 5 FATALITIES*: 0 TOTAL NO. OF CRASHES: 20	<b>SYMBOLS</b> MOVING VEHICLE BACKING VEHICLE NON-INVOLVED VEHICLE PEDESTRIAN BICYCLIST PROPERTY DAMAGE ONLY CRASH INJURY IN CRASH FATAL CRASH FIRED OBJECT NON-FIRED OBJECT ANIMAL POT-HOLE	<b>TYPES OF CRASHES</b> REAR END HEAD ON SIDE SWIPE OUT OF CONTROL OVERTURNED ENDOACHMENT LEFT TURN RIGHT ANGLE STRUCK PARKED VEHICLE	<b>COLORS</b> 2018 CRASHES 2019 CRASHES 2020 CRASHES	NEW JERSEY DEPARTMENT OF TRANSPORTATION UNIONTOWN ROAD (CR 519) FROM STRYKERS ROAD TO MEMORIAL PARKWAY GREENWICH TOWNSHIP, WARREN COUNTY 2018 - 2020 COLLISION DIAGRAMS <b>GPI</b> Engineering Design Planning Construction Management NOT TO SCALE
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Figure 10: 2020 Transportation Master Plan County Roadway Crash Hot Spots







Draft 2023 Transportation Master Plan Amendment- Truck Route Map

EXISTING TRUCK ROUTING AND RESTRICTIONS

Figure 12: NJDOT Truck Access Map



**Legend :**

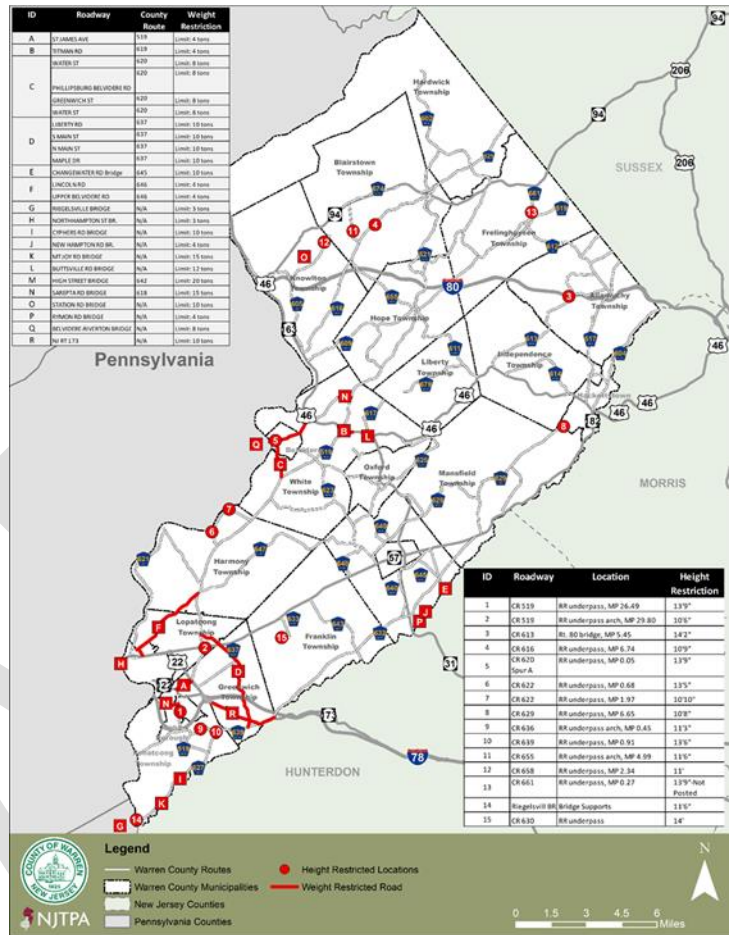
**Designated Travel Routes For 102-inch Wide Trucks and Double-Trailer Truck Combinations**

- N.J. Access Network
- National Network
- Trucks Prohibited

The large truck route designations depicted in this map are for illustrative purposes and pertain to permissible widths only. A complete description of the Large Truck Networks and the proposed applicable restrictions may be found in the New Jersey Access Code at N.J.A.C. 16-33.

Notes: Designation within the regulations and/or as depicted on the map does not always guarantee free movement of all double-trailer truck combinations and 102 inch wide double-trailer trucks on a road. Some double-trailer truck combinations and 102-inch wide standard truck movements may be restricted on a route because of route or bridge weight restrictions and/or vertical clearance restrictions.

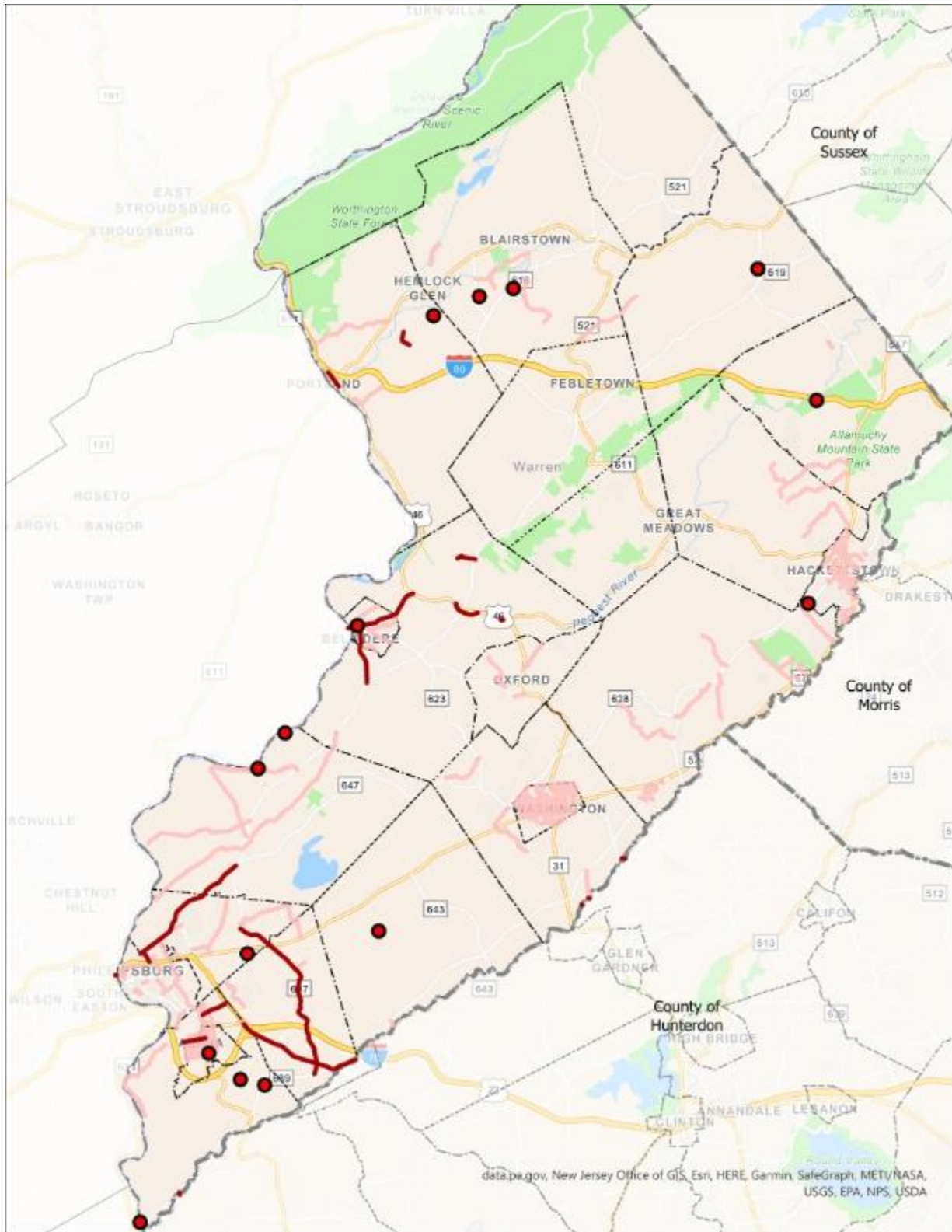
Figure 13: 2021 Transportation Master Plan Restriction Map



The County looked at all the weight, height and size restrictions throughout the County and developed a Map that shows all of the restrictions, even locally, for the entire county.



Figure 14: State, County, and Local Restrictions Map





## RECOMMENDATIONS TRUCK ROUTE MAP

Based on the factors outlined above including and based on the distribution and location of the developable industrial properties in the County; the Route Map included in Appendix A is recommended to be adopted as an amendment to the Transportation Master Plan. The Route Map directs truckers to nearest State or Interstate roadway. The purpose and use of this map is to allow the County to guide developer recommendations for truck routing and use this as the basis for restrictions to be placed on routes that may be included as conditions of approvals or in developer's agreements for Land Development applications affecting County roadway infrastructure.

To implement the truck routes the following strategies may be used as appropriate:

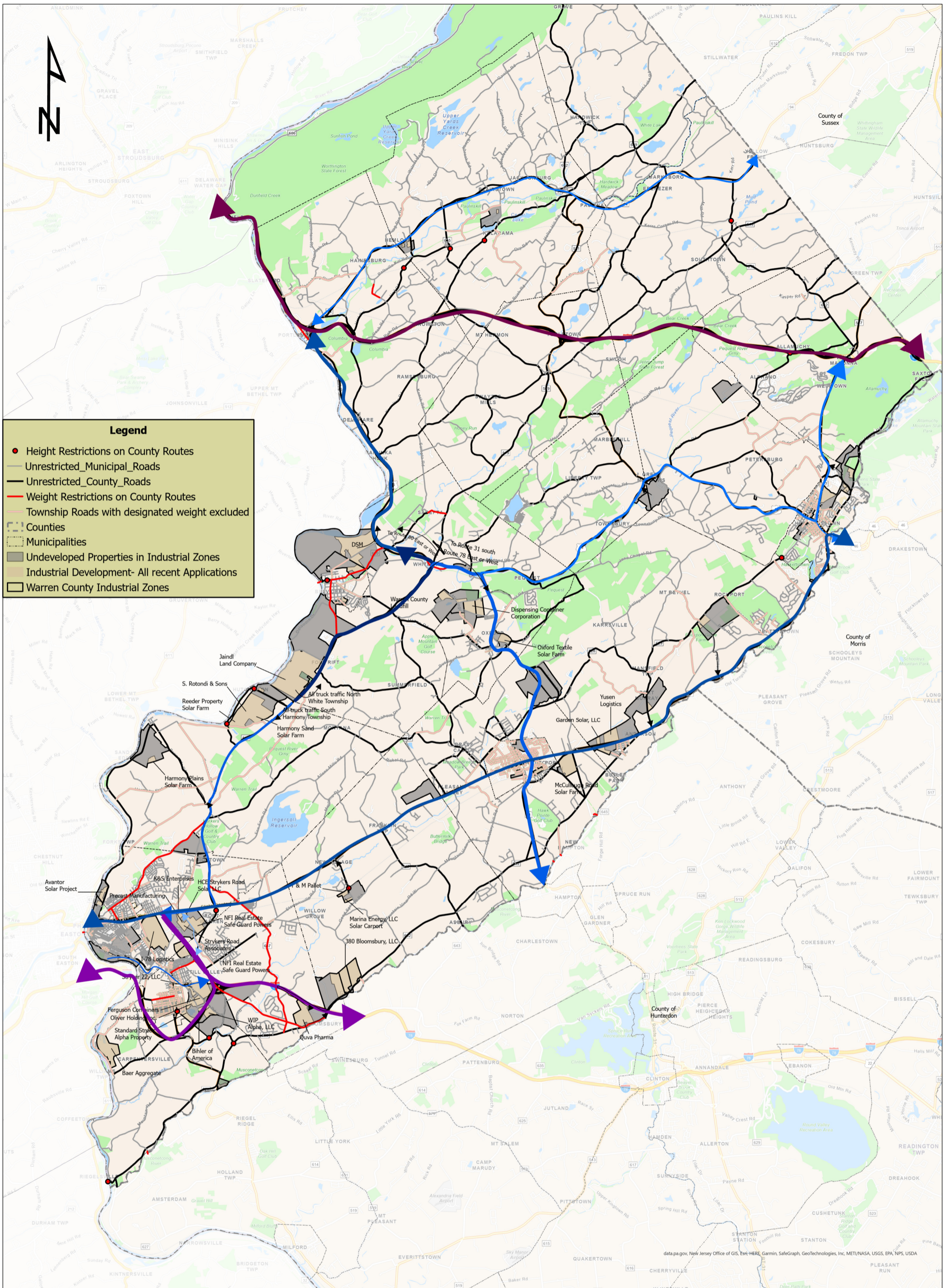
- 1. *Municipal Planning Guidance:*** The County Planning Act calls for the co-operation of the local municipalities with the county on matters that concern the integrity of the county master plan. The Truck Routing Map included in Appendix A can help guide the enhancement of local municipal master planning, zoning implementation, enforcement, the municipal development of enforceable truck routes, and decisions of local level planning and zoning boards.
- 2. *Developers Agreements:*** Municipalities and the county have the ability to enter into developers agreements with developers to manage development of site. Developer's agreements may include provisions that address; phasing, timing, performance, restoration and monitoring. Truck routing especially when dictated by municipal ordinance can be addressed and enforced locally within developer's agreements.
- 3. *Signage and Striping:*** The Truck Routing Map can help prioritize capital improvements, offsite developer mitigation improvements and enhancements related to signage and striping.
- 4. *Wayfinding Signage:*** Wayfinding signage can be installed using the Truck Routing Map to guide truck traffic to utilize the desired truck routes. Municipalities can also use the Truck Routing Map to install wayfinding signage that guides trucks from municipal roadways to the desired truck routes.
- 5. *Physical Improvements:*** The truck Routing Map can help guide the installation of local, county and state capital improvements to continue to enhance and accommodate truck traffic on the desired truck routes in the county.
- 6. *Weight Restrictions:*** After conducting an engineering study pursuant to NJDOT Regulations, and if approved by the NJDOT, weight restrictions may be placed on local roadways to restrict heavy trucks from using designated road segments.





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APPENDIX A  
Truck Route Map



## Truck Route Map Warren County, NJ



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Appendix B

102 Restriction Resolution

**THE BOARD OF COUNTY COMMISSIONERS  
OF THE COUNTY OF WARREN**

Wayne Dumont, Jr. Administration Building  
165 County Route 519, South  
Belvidere, NJ 07823

**RESOLUTION 74-23**

On a motion by **Mr. Sarnoski**, seconded by **Mr. Kern**, the following resolution was adopted by the Board of County Commissioners of the County of Warren at a meeting held February 8, 2023.

**RESOLUTION REQUESTING CHANGES TO N.J.A.C. 16:32 TO REMOVE CERTAIN  
COUNTY ROADS UNSUITABLE FOR TRAVEL BY DOUBLE-TRAILER TRUCK  
COMBINATIONS AND 102-INCH WIDE STANDARD TRUCKS FROM  
THE NEW JERSEY ACCESS NETWORK IN WARREN COUNTY**

**WHEREAS**, N.J.A.C. 16:32 was adopted to develop standards and procedures applicable to truck operations within the State of New Jersey in regard to permitted routes, widths restrictions, length requirements, access to terminals and other facilities; and

**WHEREAS**, the truck networks established should clearly identify safe and appropriate routes for through trucking as well as reasonable access for pick up and deliveries; and

**WHEREAS**, the criteria used to designate routes on the network should also include consideration for weight restrictions, height restrictions, connectivity, impacts on schools and recreation areas, pedestrian conflicts, historic and environmental impacts, restricted intersection geometry, and limited site distance; and

**WHEREAS**, the New Jersey Department of Transportation ("NJDOT") anticipates that, from time to time, requests for additions and deletions to the New Jersey Access Network will be made. These requests will be considered by the NJDOT, taking into consideration factors including, but not limited to

1. Sight distance at intersections;
2. Traffic volumes;
3. Roadway geometrics;
4. Roadside development or environment;
5. Accident records;
6. The use of the route by other trucks to date; and
7. Alternate routings; and

**WHEREAS**, Warren County has determined that the geometric characteristics of the roadways described below are insufficient for double trailer truck combinations, 102- inch wide standard trucks and other oversized trucks; and

**WHEREAS**, Warren County has determined that there will be significant improvements on these roadways including signage and striping that will make the roadways described below insufficient for double trailer truck combinations, 102- inch wide standard trucks or oversized trucks; and

**WHEREAS**, Warren County has conducted and is currently studying the many deficient intersections and segments of the roadways described below determined to be insufficient for double trailer truck combinations, 102- inch wide standard trucks and other oversized trucks; and

**WHEREAS**, there have been numerous fatal accidents involving trucks along the roadways described below and any increases in truck traffic or the facilitation of 102-inch wide or oversized trucks would continue to exacerbate an already unsafe condition on these roadways; and

**WHEREAS**, Warren County has received significant public feedback and comments regarding large truck traffic on the roadways below related to speeding, unsafe and reckless driving; and

**WHEREAS**, there are numerous suitable alternative routes available in the County for large truck traffic using the National Network Routes and State Highway system routes; and

**WHEREAS**, the truck network should be coordinated with County and Municipal Transportation master plans; and

**WHEREAS**, Warren County has carefully reviewed the routes within the County designated as part of the "New Jersey Access Network" and has determined that the following changes in the form of additional segments of County "500" series and "600" series roads to be removed from the New Jersey Access Network for travel by double-trailer truck combinations and 102- inch wide standard truck. It has been determined that the roadway segments listed below are not conducive to double-trailer truck combinations and 102-inch wide standard truck and larger vehicles due to the reasons outlined above in addition to height restrictions, connectivity, impacts on schools and recreation areas, pedestrian conflicts, historic and environmental impacts, restricted intersection geometry, and limited site distance; nor to these roads provide access to a terminal, or facilities for food, fuel, repairs and/or rest. As such, it is the County of Warren seeks the removal of the following roads from the New Jersey Access Network as it pertains to double-trailer truck combinations and 102-inchwide standard trucks:

1. County Route 519 from the northern County Boundary with Sussex County at mile marker 56.80 south to mile marker 50.15 at Route 80 in Hope Township.
2. County Route 519 from mile marker 50.15 in Hope Township south to mile marker 42.05 at Route 46 in White Township.
3. County Route 519 from mile marker 42.05 at Route 46 south to mile marker 29.95 in Lopatcong Township at Route 57.
4. County Route 519 from mile marker 29.95 to mile marker 28.35 at Route 22 in Pohatcong Township.
5. County Route 519 from mile marker 28.35 to mile marker 23.85 at the intersection with County Route 639 in Pohatcong.
6. County Route 519 from mile marker 23.85 to 23.40 at the County Boundary with Hunterdon County.
7. County Route 517 from mile marker 15.85 at the intersection with Route 46 in Hackettstown north to mile marker 20.50 at Route 80 in Allamuchy Township.
8. County Route 517 from mile marker 20.50 at Route 80 north to mile marker 22.35 at the County Boundary with Sussex County.
9. County Route 521 from mile marker 0.00 at the intersection with County Route 519 in Hope Township north to mile marker 6.05 at the intersection of Route 94 in Blirstown Township.

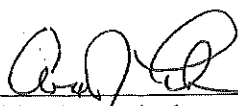
**NOW, THEREFORE, BE IT RESOLVED**, by the Board of County Commissioners of the County of Warren as follows:

1. The aforesaid recitals are hereby adopted and incorporated herein as if repeated in full.

2. The Board of Commissioners requests and recommends that the New Jersey Department of Transportation amend and modify the New Jersey Access Network to remove the above referenced roads as available travel routes for double-trailer truck combinations and 102-inchwide standard trucks.
3. The Board of Commissioners authorizes and directs the County Administrator to submit and deliver a certified copy of this Resolution on behalf of the County of Warren to the Manager, Bureau of Transportation Data and Safety, New Jersey Department of Transportation, P.O. Box 613, Trenton, New Jersey 08625-0613 and to otherwise execute, submit and deliver any and all documents and take any and all actions necessary to complete and realize the intent and purpose of this Resolution.

**RECORDED VOTE: Mr. Sarnoski yes, Mr. Kern yes, Ms. Ciesla yes**

I hereby certify the above to be a true copy of a resolution adopted by the Board of County Commissioners of the County of Warren on the date above mentioned.

  
\_\_\_\_\_  
Alex Lazorisak

, Clerk